1.) If $(2 - bi) + (3 - 5i) = 5 + 8i$, what is the value of b?

$2 - bi + 3 - 5i = 5 + 8i$

$2 + 3$

5

$-bi - 5i = 8i$

$+5i \quad +5i$

$-bi = 13i$

$\frac{-b}{-1} = \frac{13}{-1}$

$b = -13$

(A) 13
(B) −13
(C) 3
(D) −3

1. YOU TRY: If $(4 - bi) - (7 - 5i) = -3 + 8i$, what is the value of b?

$4 - bi - 7 + 5i = -3 + 8i$

$-3 - bi + 5i = -3 + 8i$

$-bi + 5i = 8i$

$-5i \quad -5i$

$-bi = 3i$

$\frac{-b}{-1} = \frac{3}{-1}$

$b = -3$

(A) 13
(B) −13
(C) 3
(D) −3

2.) Simplify $\frac{3}{2-3i} \cdot \frac{2+3i}{2+3i}$

$\frac{3(2+3i)}{4 + 6i - 6i - 9i^2}$ $i^2 = -1$

$\frac{3(2+3i)}{13}$

$\frac{6 + 9i}{13}$

2. YOU TRY: Simplify $\frac{-2}{3-4i}$.

$\frac{-2(3+4i)}{(3-4i)(3+4i)}$

$\frac{-2(3+4i)}{9 - 12i + 12i - 16i^2}$ $i^2 = -1$

$\frac{-6 - 8i}{25}$

(A) $\frac{-b-8i}{-1}$
(B) $\frac{-6-8i}{-25}$
(C) $\frac{-6-8i}{25}$
(D) $\frac{-6-8i}{11}$